



Meeting the world's energy needs: Innovative energy technology

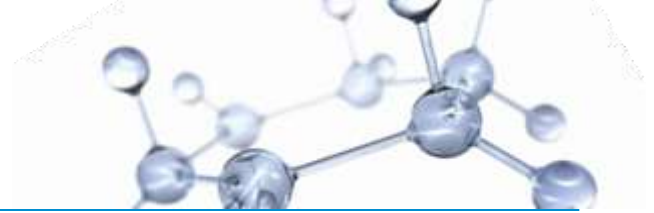
Monica Mainland
ExxonMobil Baton Rouge
Refinery Technical Manager
DEQ Green Business Expo
Aug. 24, 2011

meeting the world's energy needs

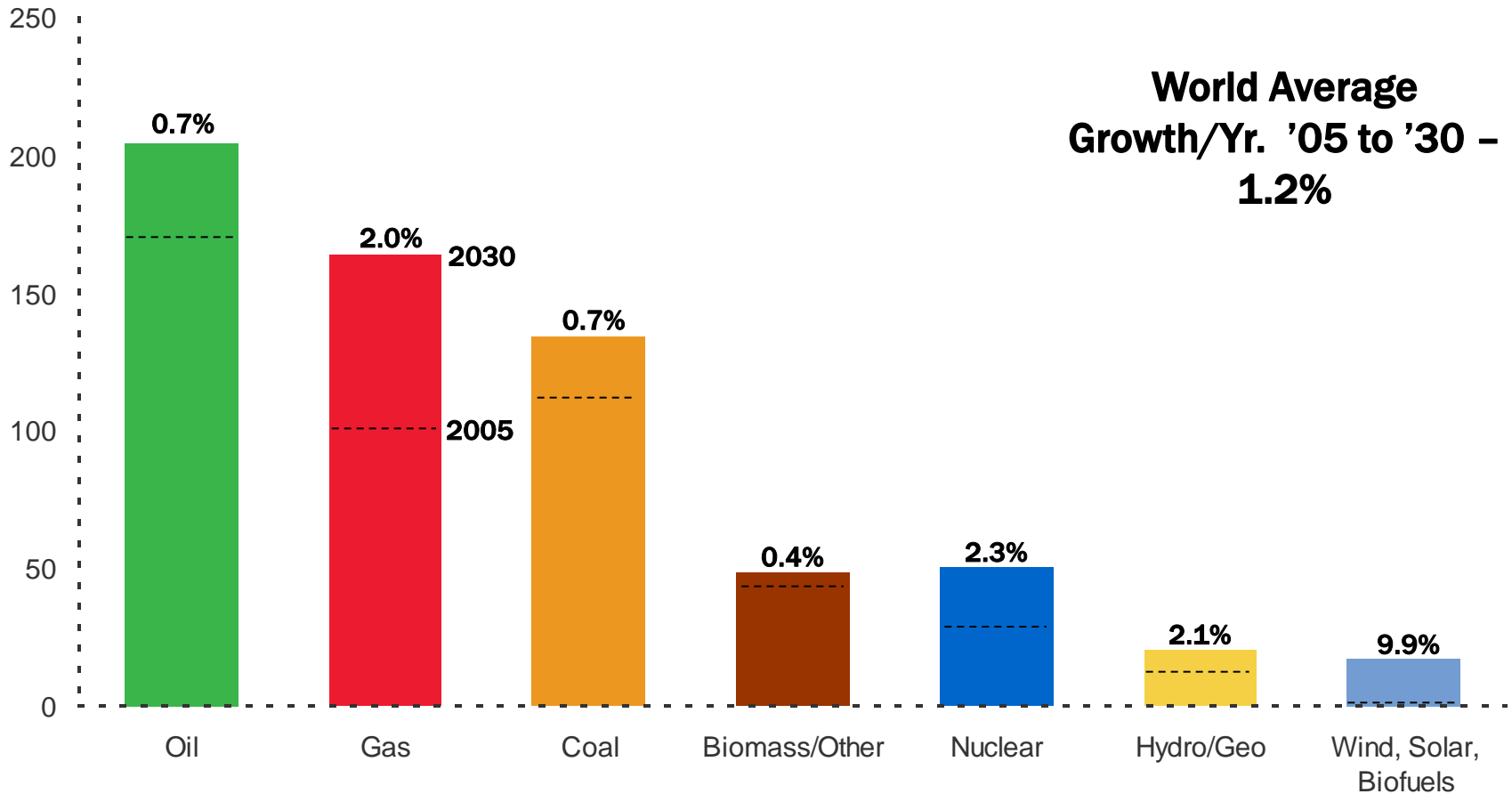


- Access to energy remains essential to progress
- Providing reliable energy supplies requires choices and tradeoffs
- Several approaches have and will continue to provide solutions
 - Free and open markets to balance supply with growing demand
 - Wise and efficient use of energy
 - Technological progress
 - Global interdependence

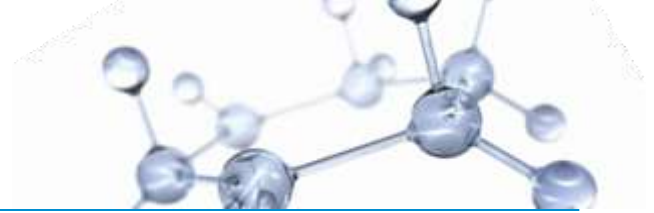
energy Mix Continues to Evolve



Quadrillion BTUs

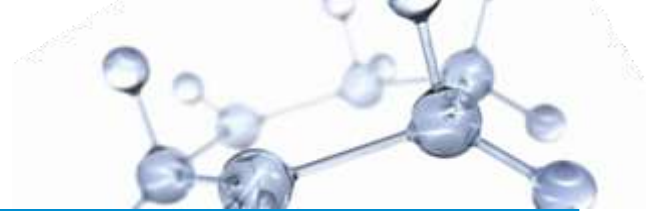


**World Average
Growth/Yr. '05 to '30 –
1.2%**



meeting the
energy challenge





increasing
efficiency



increasing efficiency in transportation



- efficiency and technological developments in vehicles are critical
- we are developing vehicle technologies to improve fuel economy and reduce emissions



advanced
technologies for
conventional
vehicles

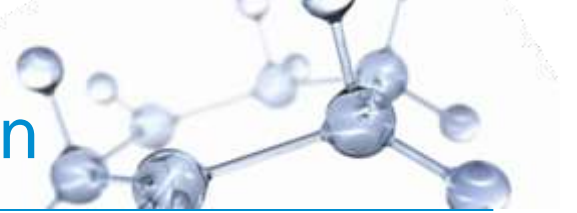


breakthrough
technologies

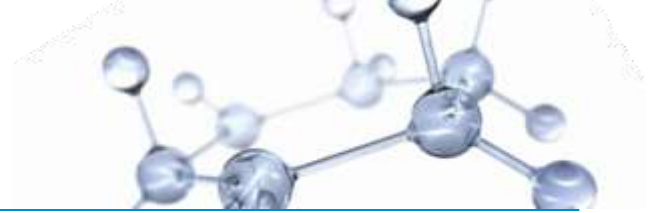
advanced vehicles



increasing efficiency in power generation



- power generation represents 50% of the increase in energy demand through 2030
 - driven by demand for electricity in developing countries
- ExxonMobil is researching and deploying technologies to reduce emissions from our operations including:
 - cogeneration
 - gasification
 - Carbon Capture and Storage
 - Controlled Freeze Zone



expanding supply



expanding supplies



- **Directional drilling**
 - Record-setting horizontal wells stretching 7+ miles enable us to produce more oil with less environmental impact
- **Unconventional and liquefied natural gas**
 - Multi-Zone Stimulation Technology™, allows us to produce “tight gas”; large-scale Q-Max tankers allow us to safely and efficiently deliver natural gas
 - to markets worldwide.



- **Algae biofuels**

ExxonMobil is investing up to \$600 million to develop oils that are compatible with existing transportation technology and infrastructure from photosynthetic, CO₂-consuming algae



renewable energies



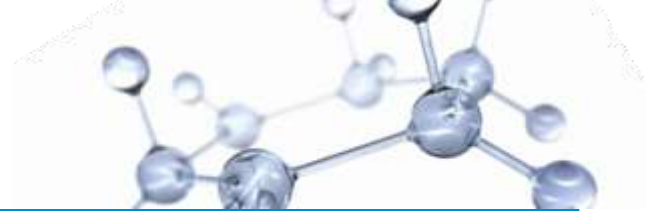
wind & solar

- fastest growing non-fossil fuel sources
- wind more competitive than solar
- major technology advances needed



biofuels

- land and water constraints
- next generation research includes cellulosic ethanol, algae



reducing emissions

Reducing emissions



Reduced emissions and improved energy efficiency by:

- developing proprietary breakthrough technologies
- strategic research and collaborations



With new technologies developed since 2005, ExxonMobil has reduced GHG emissions by the equivalent of removing 1.4 millions cars from US roads

Conclusion



- Population and economies will expand; energy demand and CO₂ emissions will rise.
- Integrated set of solutions required.
 - Increase efficiency
 - Expand supply
 - Reduce emissions
- Technology breakthroughs are critical.
 - Algae-based biofuels could contribute to set of solutions
- Meeting this demand will require a global effort.

Thank you



Questions?

Innovative Energy Technology

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